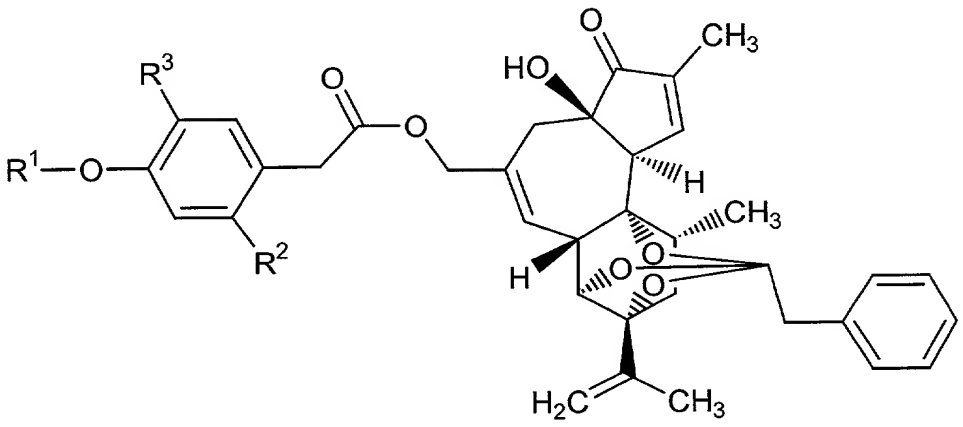
What is claimed is:

1. A method for preparing a resiniferatoxin derivative compound of Formula (I):



Formula (I)

wherein

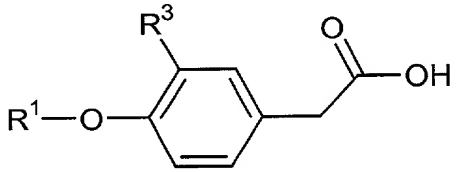
R^1 is a substituent selected from the group consisting of hydrogen, C_{1-4}alkylcarbonyl and formyl;

R^2 is iodine; and,

R^3 is a substituent selected from the group consisting of C_{1-4}alkoxy and hydroxy;

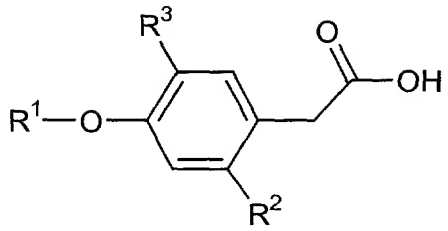
comprising,

iodinating the ortho position on the phenyl ring of a homovanillic acid derivative compound of Formula (II);



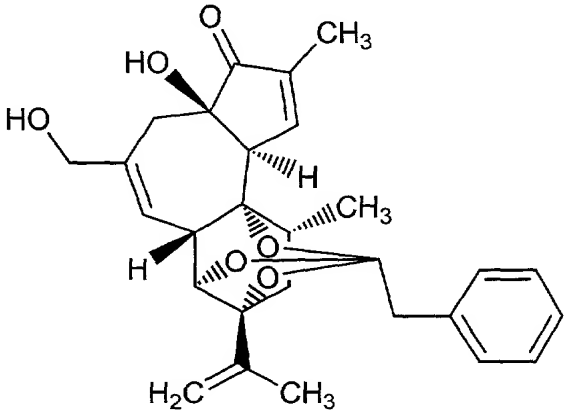
Formula (II)

to form an intermediate compound of Formula (III); and,



Formula (III)

coupling the intermediate compound of Formula (III) with a resiniferonal orthophenylacetate alcohol compound of Formula (IV);



Formula (IV)

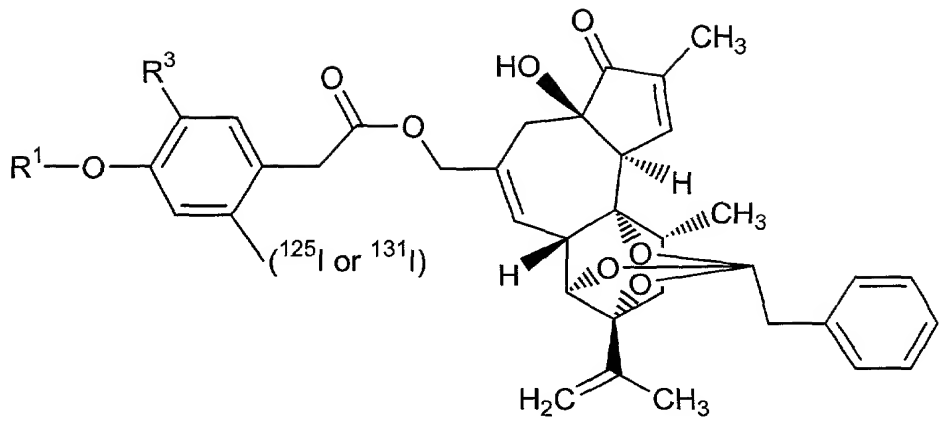
to form the compound of Formula (I).

2. The method of claim 1 wherein R^1 is acetyl and R^3 is methoxy.

3. The method of claim 1 wherein R^2 is ^{127}iodine.

4. The method of claim 1 wherein R^2 is selected from the group consisting of ^{125}iodine and ^{131}iodine.

5. A method for preparing a labeled resiniferatoxin derivative compound of Formula (V):



Formula (V)

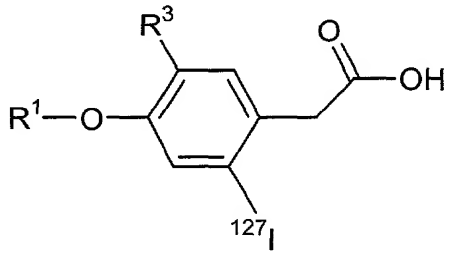
wherein

R^1 is a substituent selected from the group consisting of hydrogen, C_{1-4}alkylcarbonyl and formyl; and,

R^3 is C_{1-4}alkoxy;

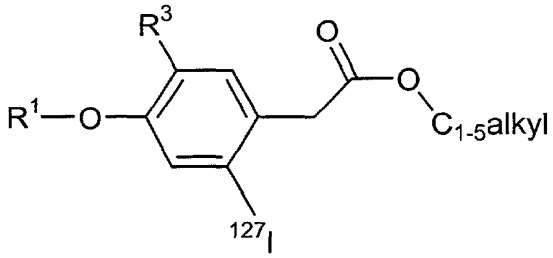
comprising,

protecting the carboxylic acid of an intermediate compound of Formula (VI);



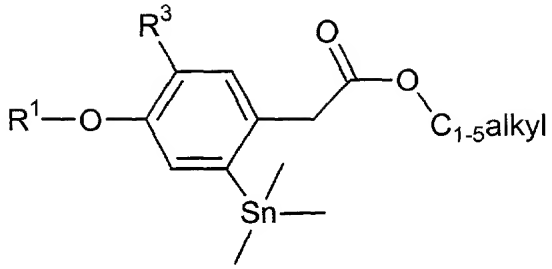
Formula (VI)

wherein the hydroxyl group of the compound of Formula (VI) is esterified with C_{1-5} alkyl to form an esterified intermediate compound of Formula (VII);



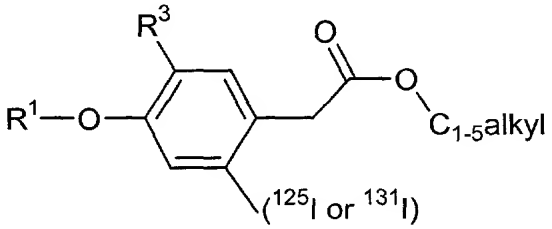
Formula (VII)

stannylating the compound of Formula (VII) to form a stannylated intermediate compound of Formula (VIII);



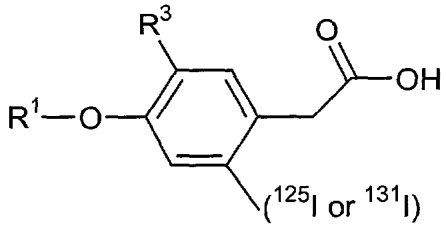
Formula (VIII)

iodinating the compound of Formula (VIII) to form a labeled intermediate compound of Formula (IX);



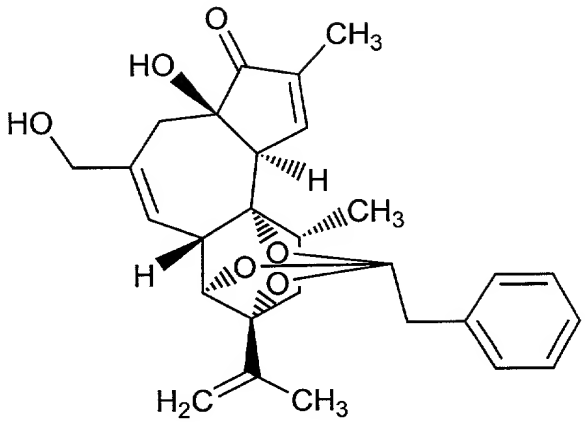
Formula (IX)

deprotecting the compound of Formula (IX) to form a labeled intermediate compound of Formula (X); and,



Formula (X)

coupling the labeled intermediate compound of Formula (X) with a resiniferonal orthophenylacetate alcohol compound of Formula (IV);



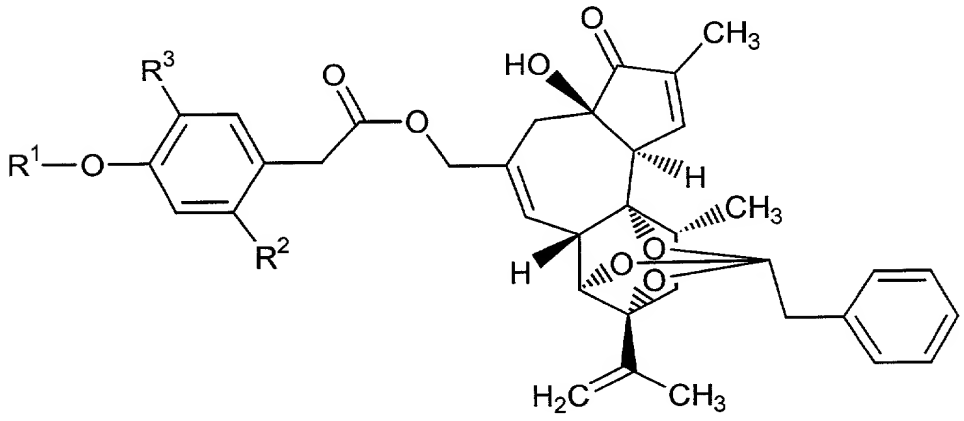
Formula (IV)

to form the compound of Formula (V).

6. The method of claim 5 wherein C_{1-5}alkyl is selected from the group consisting of *i*-propyl, *i*-butyl and *t*-butyl.

7. The method of claim 6 wherein C_{1-5}alkyl is *t*-butyl, R^1 is acetyl and R^3 is methoxy.

8. A resiniferatoxin derivative compound of Formula (I)



Formula (I)

wherein

R^1 is a substituent selected from the group consisting of hydrogen, C_{1-4}alkylcarbonyl and formyl;

R^2 is iodine; and,

R^3 is a substituent selected from the group consisting of C_{1-4}alkoxy and

hydroxy.

9. The compound of claim 8 wherein R^1 is a substituent selected from the group consisting of hydrogen, formyl, acetyl, ethylcarbonyl and propylcarbonyl.

10. The compound of claim 9 wherein R^1 is a substituent selected from the group consisting of hydrogen, formyl and acetyl.

11. The compound of claim 10 wherein R^1 is a substituent selected from the group consisting of hydrogen and acetyl.

12. The compound of claim 8 wherein R^2 is a substituent selected from the group consisting of ^{125}iodine, ^{127}iodine and ^{131}iodine.

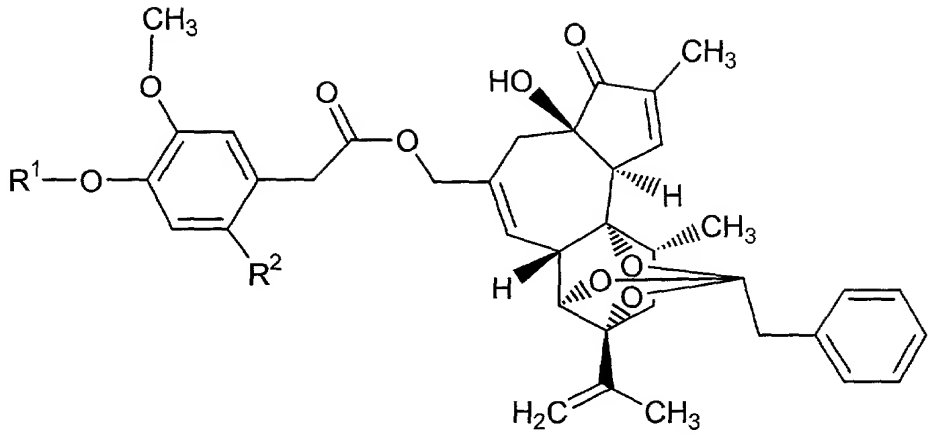
13. The compound of claim 12 wherein R^2 is ^{127}iodine.

14. The compound of claim 12 wherein R^2 is ^{125}iodine.

15. The compound of claim 8 wherein R^3 is a substituent selected from methoxy, ethoxy, propoxy and butoxy.

16. The compound of claim 15 wherein R^3 is methoxy.

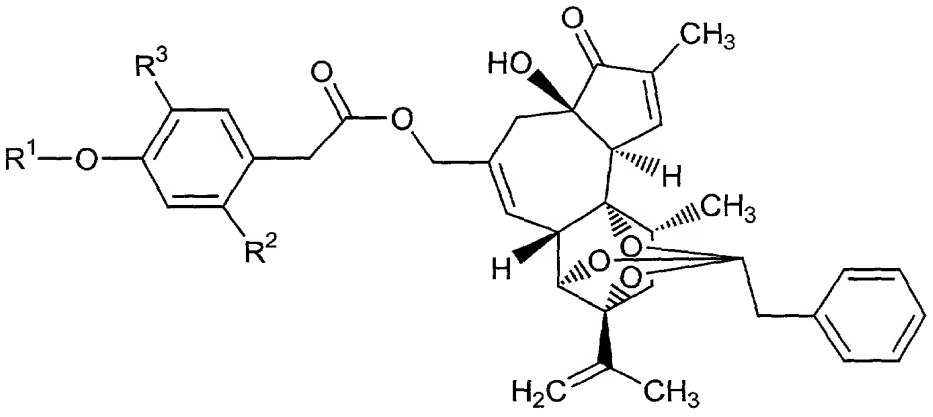
17. The compound of claim 8 selected from the group consisting of those of the formula:



wherein R^1 and R^2 are selected from

R^1	R^2
$C(O)CH_3$	I;
H	I;
$C(O)CH_3$	^{125}iodine;
H	^{125}iodine;
$C(O)CH_3$	^{131}iodine; or,
H	^{131}iodine.

18. A method for use of a resiniferatoxin derivative compound of Formula (I)



Formula (I)

wherein

R^1 is a substituent selected from the group consisting of hydrogen,

C_{1-4}alkylcarbonyl and formyl;

R^2 is iodine; and,

R^3 is a substituent selected from the group consisting of C_{1-4}alkoxy and hydroxy;

comprising incubating said compound with a membrane at about 37°C for about 60 minutes.

19. The method of claim 18 wherein the membrane is selected from the group consisting of a cell membrane and a tissue membrane.